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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,306	11/24/2003	Steve J. Green	1-24771	7069

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EXAMINER	
FERGUSON, MICHAEL P	

ART UNIT	PAPER NUMBER
3679	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/721,306	GREEN ET AL.
	Examiner	Art Unit
	Michael P. Ferguson	3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 November 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/24/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

In the specification, paragraph **[0022]** (line 4) recites " [should discuss 2nd embodiment, then discuss advantages since they apply to both embodiments of the invention] ". It should be deleted.

Appropriate correction is required.

Claim Objections

2. Claims 4, 10, 11, 20, 21 and 26 are objected to because of the following informalities:

Claim 4 (line 1) recites "according to Claim 1". It should recite --according to Claim 2--.

Claim 10 (line 1) recites "said resilient ball member". It should recite --said resilient member--.

Claim 11 (line 2) recites "said resilient ball member". It should recite --said resilient member--.

Claim 20 (line 1) recites "said resilient ball member". It should recite --said resilient member--.

Claim 21 (line 2) recites "said resilient ball member". It should recite --said resilient member--.

Claim 26 (line 1) recites "said resilient ball member". It should recite --said resilient member--.

For the purpose of examining the application, it is assumed that appropriate correction has been made.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 8-15, 18-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Wood, Jr. (US 5,061,110).

As to claim 1, Wood, Jr. discloses a ball joint comprising:

a housing **26** having an opening **32** and an inner chamber;

a ball stud **12** disposed in the chamber of the housing and having an outer surface; and

a resilient member **14** fixedly attached to the outer surface of the ball stud (Figure 1).

As to claim 2, Wood, Jr. discloses a ball joint wherein the ball stud **12** has a first axis and second axis transverse to the first axis, an intersection of the first axis and the second axis defining a center of oscillation, wherein the ball stud is normally centered on the center of oscillation (Figure 1).

As to claim 3, Wood, Jr. discloses a ball joint wherein when a first force is applied to the ball stud **12**, the ball stud is caused to oscillate about the center of oscillation within a predetermined angle relative to the normally centered position, and wherein the

predetermined angle is within the range of from about 0 degrees to about 40 degrees (Figure 1).

As to claim 4, Wood, Jr. discloses a ball joint wherein the resilient member **14** is formed of a material having a predetermined hardness to thereby apply a restoring force to maintain or return the ball stud **12** to the normally centered position (column 3 lines 6-23).

As to claim 5, Wood, Jr. discloses a ball joint wherein the housing **26** includes a pair of openings **32,34** (Figure 1).

As to claim 8, Wood, Jr. discloses a ball joint wherein the ball stud **12** includes a ball portion **40** and a shaft **42** extending outwardly from the ball portion through the opening **32** (Figure 1).

As to claim 9, Wood, Jr. discloses a ball joint wherein the inner chamber is generally spherical shaped and an outer surface of the resilient member **14** is generally spherical shaped (Figure 1).

As to claim 10, Wood, Jr. discloses a ball joint wherein the resilient member **14** is fixedly attached to the outer surface of the ball stud **12** with an adhesive (column 3 lines 6-23).

As to claim 11, Wood, Jr. discloses a ball joint wherein an outer surface of the resilient member **14** frictionally engages the inner chamber of the housing **26** (Figure 1).

As to claim 12, Wood, Jr. discloses a ball joint wherein the resilient member **14** is formed from one of rubber and neoprene (column 3 lines 6-23).

As to claim 13, Wood, Jr. discloses a ball joint for a vehicle having steering wheel, the ball joint comprising:

a housing **26** having an opening **32** and an inner chamber;

a ball stud **12** disposed in the chamber of the housing and having an outer surface; and

a resilient member **14** fixedly attached to the outer surface of the ball stud, wherein the ball stud has a first axis and second axis transverse to the first axis, an intersection of the first axis and the second axis defining a center of oscillation, wherein the ball stud is normally centered on the center of oscillation, and wherein the resilient ball member is formed of a material having a predetermined hardness to thereby apply a restoring force to maintain or restore the ball stud to the normally centered position (column 3 lines 6-23; Figure 1).

As to claim 14, Wood, Jr. discloses a ball joint wherein when a first force is applied to the ball stud **12** by turning of a vehicle steering wheel, the ball stud is caused to oscillate about the center of oscillation within a predetermined angle relative to the normally centered position, and wherein the predetermined angle is within the range of from about 0 degrees to about 40 degrees (column 2 lines 48-62; Figure 1).

As to claim 15, Wood, Jr. discloses a ball joint wherein the housing **26** includes a pair of openings **32,34** (Figure 1).

As to claim 18, Wood, Jr. discloses a ball joint wherein the ball stud **12** includes a ball portion **40** and a shaft **42** extending outwardly from the ball portion through the opening **32** (Figure 1).

As to claim 19, Wood, Jr. discloses a ball joint wherein the inner chamber is generally spherical shaped and an outer surface of the resilient member **14** is generally spherical shaped (Figure 1).

As to claim 20, Wood, Jr. discloses a ball joint wherein the resilient member **14** is fixedly attached to the outer surface of the ball stud **12** with an adhesive (column 3 lines 6-23).

As to claim 21, Wood, Jr. discloses a ball joint wherein an outer surface of the resilient member **14** frictionally engages the inner chamber of the housing **26** (Figure 1).

As to claim 22, Wood, Jr. discloses a ball joint wherein the resilient member **14** is formed from one of rubber and neoprene (column 3 lines 6-23).

As to claim 23, Wood, Jr. discloses a tie rod end adapted for use in a vehicle having a steering wheel for controlling steerable wheels, the tie rod end comprising:

a housing **26** having an opening **32** and an inner chamber;

a stem **24** extending outwardly from the housing;

a ball stud **12** disposed in the chamber of the housing and having an outer surface, wherein the ball stud has a first axis and second axis transverse to the first axis, an intersection of the first axis and the second axis defining a center of oscillation, and wherein the ball stud is normally centered on the center of oscillation; and

a resilient member **14** fixedly attached to the outer surface of the ball stud, wherein the resilient ball member is formed of a material having a predetermined hardness to thereby apply a restoring force to maintain or restore the ball stud to the normally centered position, and wherein when a first force is applied to the ball stud by

turning of a vehicle steering wheel, the ball stud is caused to oscillate about the center of oscillation within a predetermined angle relative to the normally centered position, and wherein the predetermined angle is within the range of from about 0 degrees to about 40 degrees (column 3 lines 6-23, column 2 lines 48-62; Figure 1).

As to claim 24, Wood, Jr. discloses a tie rod end wherein the housing **26** includes a pair of openings **32,34** (Figure 1).

As to claim 26, Wood, Jr. discloses a tie rod end wherein the resilient member **14** is fixedly attached to the outer surface of the ball stud **12** with an adhesive (column 3 lines 6-23).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6, 7, 16, 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood, Jr. in view of Wood, Jr.$_2$ (US 4,695,182).

As to claim 6, Wood, Jr. discloses a ball joint including deformable housing segments **68** about one **34** of the pair of openings to thereby seal the one of the pair of openings and retain the ball stud **12** within the inner chamber of the housing **26** (Figures 1-3). Wood, Jr. discloses a ball joint including deformable housing segments instead of a cap carried by the housing.

Wood, Jr.$_2$ teaches a ball joint including a cap **124** carried by a housing **112** about one of a pair of openings to thereby seal the one of the pair of openings and retain a ball stud **114** within an inner chamber of the housing, wherein the cap is secured to the housing by deforming a portion of the housing about the cap (Figure 3). Inasmuch as the references disclose deformable housing segments and caps as art recognized equivalents, it would have been obvious to one of ordinary skill in the exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

As to claim 7, Wood, Jr.$_2$ teaches a ball joint wherein the cap **124** is secured to the housing **112** by deforming a portion of the housing about the cap (Figure 3).

As to claim 16, Wood, Jr. discloses a ball joint including deformable housing segments **68** about one **34** of the pair of openings to thereby seal the one of the pair of openings and retain the ball stud **12** within the inner chamber of the housing **26** (Figures 1-3). Wood, Jr. discloses a ball joint including deformable housing segments instead of a cap carried by the housing.

Wood, Jr.$_2$ teaches a ball joint including a cap **124** carried by a housing **112** about one of a pair of openings to thereby seal the one of the pair of openings and retain a ball stud **114** within an inner chamber of the housing, wherein the cap is secured to the housing by deforming a portion of the housing about the cap (Figure 3). Inasmuch as the references disclose deformable housing segments and caps as art recognized equivalents, it would have been obvious to one of ordinary skill in the

exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

As to claim 17, Wood, Jr.$_2$ teaches a ball joint wherein the cap **124** is secured to the housing **112** by deforming a portion of the housing about the cap (Figure 3).

As to claim 25, Wood, Jr. discloses a tie rod end including deformable housing segments **68** about one **34** of the pair of openings to thereby seal the one of the pair of openings and retain the ball stud **12** within the inner chamber of the housing **26** (Figures 1-3). Wood, Jr. discloses a ball joint including deformable housing segments instead of a cap carried by the housing, wherein the cap is secured to the housing by deforming a portion of the housing about the cap.

Wood, Jr.$_2$ teaches a ball joint including a cap **124** carried by a housing **112** about one of a pair of openings to thereby seal the one of the pair of openings and retain a ball stud **114** within an inner chamber of the housing, wherein the cap is secured to the housing by deforming a portion of the housing about the cap (Figure 3). Inasmuch as the references disclose deformable housing segments and caps as art recognized equivalents, it would have been obvious to one of ordinary skill in the exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to ball joints:

Dresselhouse (US 5,163,769), Snyder et al. (US 4,235,558) and Herbenar et al. (US 3,486,778) are cited for pertaining to ball joints comprising a resilient member which is attached to the outer surface of a ball stud.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703)308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MPF
12/15/04

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